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J. C. BRANNER, *Director.*

SOME NEW PARASITIC HYMENOPTERA FROM BRAZIL.¹

BY CHARLES T. BRUES.

In a previous publication,² I have dealt with part of a very interesting collection of Parasitic Hymenoptera obtained by the Stanford Expedition to Brazil. Only the Ichneumonidae and Braconidae were included in the first paper, and the present one contains descriptions of a number of new species belonging to other families. There are many other species, especially in the superfamily Chalcidoidea which it has seemed inadvisable to consider at the present time, mainly on account of the great difficulty experienced in recognizing with certainty many of the species described by early writers. Descriptions of eleven new species and one new genus are given below while thirty-one new species and three new genera were included in the previous report.

FAMILY STEPHANIDÆ.

Fœnatopus aurantiiceps sp. nov.

♀. Length 14 mm.; ovipositor 16 mm.; wing 8.5 mm. Black; head and base of antennæ bright ferruginous; four anterior legs more or less fuscous; tip of hind tibiæ and hind metatarsus fulvous; ovipositor with a subapical white annulus. Head above transversely aciculate, the aciculations between the ocelli curving forward and forming a series of bowed lines enclosed in a shield-shaped margined area that has its anterior angles tuberculate; on each side of the median ocellus is another tubercle which form an equilateral triangle with a third median one below the ocellus. Face with somewhat irregular transverse aciculations below; above, the aciculations curve upwards laterally passing from the median to the lateral

¹ Contributions from the Entomological Laboratory of the Bussey Institution, Harvard University, No. 82.

² *Ann. Entom. Soc. Amer.*, vol. 5, pp. 193-228.

tubercles. Mandibles obtusely pointed, with an obsolete tooth on each side before tip; paler than the head at base and black at tips, with many stiff yellow hairs near the middle; malar space very short, with furrow. Maxillary palpi 5-jointed, first joint very short, fourth and fifth longest. Antennæ 34 or 35-jointed, reaching to the tip of the first abdominal segment; first two joints ferruginous, remainder piceous: scape twice as long as thick, pedicel obovate somewhat over one-half as long as the scape; first flagellar joint equalling the scape, but one-fourth as thick as long; following 4 or 5 joints nearly equal, each about one-half longer than the first; remaining ones gradually shortening and becoming more slender. Cheeks and temples smooth and polished, sparsely clothed with yellowish hairs near the base of the mandibles. Prothorax transversely-striate; as long as the head above and evenly widened behind when seen from above. Mesonotum very short, irregularly areolate, but with a pair of contiguous well-defined squarish areolæ medially behind. Axillæ large, faintly striate, each with two foveæ toward the median line behind; separated from the scutellum and from one another by crenate impressed grooves; scutellum smooth centrally, but with a few foveæ or large scattered punctures on the sides. Metanotum with large, rather closely placed circular foveæ, the spaces between them showing fine transverse aciculations. Petiole of abdomen straight, of equal thickness throughout, twice as long as the thorax, exclusive of the pronotum, its entire surface somewhat irregularly transverse-striate, on each side with a lateral carina that is much more distinct near its origin at the anterior angles; second segment scarcely over one-third as long as the first, at the extreme base above with transverse striæ; toward the middle microscopically shagreened, and apically microscopically transversely aciculate. Following segments showing very faint traces of aciculation except the last which is faintly shagreened. Mesopleura smooth above, obliquely raised along an oblique line from the base of the middle coxa to below the tegula; on the pleura below and on the pectus transversely aciculate, with some large confluent punctures intermixed anteriorly and just below the lateral ridge. Metapleura sculptured like the metanotum, with a lateral carina which becomes obsolete anteriorly. Fore and middle legs piceous, with the base of the femora, knees and base of metatarsus brownish. Hind coxæ half as long as the petiole of the abdomen and resembling it in size and sculpture except that they are thickened beyond the middle. Hind femora with three teeth below, the largest one at the middle, the next halfway toward the apex and the smallest one-third way to the base; nearer the base is a still smaller, obsolete tooth; in addition with three very small denticles between the middle and subapical tooth. Posterior tibia inwardly at apex with a small pad of yellowish white hairs. Wings hyaline, with fuscous veins; radial cell open on its apical fifth; median and submedian cells closed, of equal length; discoidal cell with only its basal and upper sides indicated by veins. Tegulæ at tip, and root of wing, fulvous.

One female from Manaos, Brazil (Mann & Baker).

This is the second species of *Fœnatopus* to be described from Brazil, all the others being of African provenience. It differs from *F. annulipes* Kieffer from Pará, Brazil, by its orange-colored head, absence of transverse striæ on the mesonotum and lack of

punctures on the sides of the prothorax, as well by its shorter ovipositor. It is also much smaller, 14 mm., instead of 30 mm.

FAMILY EVANIIDÆ.

Hyptia libertatis sp. nov.

♂. Length 4.5 mm. Head, prothorax, scape of antennæ, fore legs, spot on base of their coxæ, and middle legs ferruginous or fulvous; otherwise black. Entire head deeply pitted with thimble-shaped punctures, those on the front quite plainly arranged in arcs with the base of the antennæ as center; between the punctures with faint aciculations running with the lines of punctures on the front and vertically on the cheeks. Inner orbits narrowly impunctate below and continued across the malar space as a raised smooth strip. Punctures of posterior part of head arranged in vertical lines. Below the antennæ the color of the head becomes much lighter, pale yellowish brown; mandibles of same color, with black tips; palpi fuscous, paler at the articulations. Antennæ 13-jointed; scape ferruginous, flagellum piceous; scape four times as long as thick at apex, as long as the first and second joints of the flagellum taken together; pedicel as long as thick, half as long as the first flagellar joint; flagellar joints increasing very slightly in length from the first to third and subequal from thence onward; those at the middle distinctly thicker than at base and apex; joints 1 to 6 twice as long as thick. Thorax above punctured like the head, with distinct transverse aciculations between the punctures on the mesonotum. Metathorax just above the insertion of the abdomen with a small smooth, polished space. Propleura smooth, with an oblique femoral impression; at root of wing and below with several foveæ. Mesopleura with a smooth femoral impression above which are several irregular foveæ, and below finely punctate with some large punctures intermixed. Metapleura reticulate, with the femoral furrow smooth on its lower half; posterior declivity of metathorax similarly reticulated, but so densely clothed with silvery pubescence that the sculpture is nearly obscured. Abdominal petiole longitudinally aciculate above, with sparse, medium-sized punctures, and sparsely clothed with appressed glistening white hairs; body of abdomen obovate, highly polished. Four anterior legs, except middle coxæ, fusco-ferruginous; hind legs entirely black, their tibiæ and tarsi without spinules; longer spur of tibia half the length of the metatarsus. Wings hyaline, venation piceous; costal cell complete; submedian vein as long as the costal cell, with a swelling just beyond its middle.

One specimen, Independencia, Parahyba, Brazil, Mann and Heath.

This pretty little species resembles *H. spinulosa* Kieff., but has the hind legs black and lacks the spinules on the hind tibia.

FAMILY CHALCIDIDÆ.

Eniaca neotropica sp. nov.

♀. Length 3.8 mm. Head and thorax æneous; abdomen black; antennæ, four anterior legs and hind tarsi ferruginous; fore wings strongly tinged with brown,

hind ones hyaline. Head above very coarsely and closely punctate so as to appear reticulate, each depression with a stiff glistening hair at its center. Anterior median emargination as deep as the length of the eye when seen from above, just reaching the median ocellus. Each side of the frontal horns margined above and below on its carinate lower edge. Antennæ 13-jointed, the scape slender, obclavate; flagellum considerably thickened toward the apex; one ring-joint, the first flagellar joint slightly longer than the pedicel, one-third longer than the second which is quadrate; following joints to the club of about equal length, but becoming thicker. Length of head below twice its height. Thorax sculptured like the head, the scutellum weakly carinate medially on its anterior half, the carina extending over the mesonotum where it is, however, less distinct. Metanotum with its lateral angles strongly produced into large, blunt teeth, posterior angles more acutely produced into small teeth; lateral margins carinate and the pleural surface separated from the dorsal one by a carina which curves inward medially; metanotum coarsely, obliquely reticulate on its anterior half, which bears a large shield-shaped areola; behind with a Y-shaped carina that defines a pair of areolæ at the apex of the metanotum. Pleuræ sculptured like the notum, except the large mesosternal furrow which is closely, transversely striated; metapleuræ below on each side with two tooth-like projections along the posterior margin. Petiole of the abdomen with four longitudinal carinæ above in addition to another somewhat oblique carina on each side; between the carinæ minutely rugose; seen from above, the petiole is as long as broad at base and distinctly widened apically. Second segment covering two-thirds of the abdomen, its posterior margin strongly curved forward medially; basal two-fifths longitudinally striate except on the sides remainder highly polished, except for a faint shagreen on the sides; following segments smooth anteriorly, shagreened posteriorly and clothed with sparse glistening hairs laterally. Hind femora below (on the outer side) with a series of closely placed minute, pectinate teeth; above with a fine carinate line, but no teeth. Wings with the marginal vein one-fourth longer than the submarginal; stigmal and postmarginal not developed. Ovipositor not extruded.

One specimen from Ceará—Mirim, Rio Grande do Norte, Brazil.
Wm. M. Mann.

This species may be distinguished as follows:

1. Antennæ, or at least the entire flagellum, black..... 2
Antennæ entirely ferruginous (Brazil) *neotropica* sp. nov.
2. Scape of antennæ rufous, flagellum black; hind tarsi red. (Texas,
(U. S. A.)..... *texana* Ashm.
Antennæ entirely black; hind legs entirely black..... *hesperidum* Rossi.

FAMILY PERILAMPIDÆ.

Perilampus injactans sp. nov.

♀. Length 2.5 mm. Head and thorax black, pleuræ and abdomen with a purplish blue reflection; antennæ reddish brown near tips, especially below; femora black, with strong blue reflection, tibiæ fuscous, pale yellow at base and apex, tarsi

yellowish white, with the extreme tip dark. Wings hyaline. Occiput behind the ocelli finely, irregularly transversely striate and finely shagreened forward to the level of the anterior ocellus. Facial basin smooth and polished, margined laterally by a raised line that separates it from the narrow orbits and curves inward above to include the anterior ocellus. Lower corners of facial basin striated, their striæ extending upwards for a short distance along the orbits. Clypeus with a few large shallow punctures; face at sides of clypeus minutely rugulose; genæ vertically striated, these striæ extending upwards to meet those on the occiput. Thorax and scutellum umbilicately punctate except for the axillæ and a space external to each parapsidal furrow. Scutellum with a carinate margin that is emarginate at tip to form two blunt teeth. Tegulæ rufo-fuscous. Metathorax with a strong median carina. Mesopleura with a large, irregular depression above and a number of smaller, circular foveæ below. Wings with the marginal vein distinctly longer than the post marginal and twice as long as the stigmal.

One specimen, Ceará-Mirim, Rio Grande do Norte, Brazil, Wm. M. Mann.

This species has the orbital space on the sides of the front usually narrow, and only slightly widened above; the eyes are large, separated by only the width of the antenna from the base of the mandibles, and the malar furrow is distinct. There is no ridge or carina on the face near the side of the clypeus. It is most closely related to *P. bakeri* Crawford recently described from North America, but the facial carinæ extend below the insertion of the antennæ, and the scutellum is deeply emarginate at apex.

FAMILY CLEONYMIDÆ.

Pelecinnella Westwood.

There is a specimen of this remarkable genus which represents an undescribed species. Three species have previously been described, all from Brazil, which may be distinguished from the present one as follows:

Key to the Species of Pelecinnella.

1. Body and legs mainly black, with more or less bluish, greenish or purplish reflections. 2
 At least the abdomen in great part rufous; legs rufous or brown. 3
2. Prothorax rufous on the sides; joints 2-4 of hind tarsi white, hind metatarsus black. *phantasma* Westw.
 Prothorax entirely black; hind metatarsus white, following joints dark brown or piceous. *ashmeadi* sp. nov.
3. Head above, and thorax above (rarely entirely), abdomen, except segments 2 and 3, black; ovipositor half as long as the body. *howardi* Ashm.
 Head, thorax, except above, and abdomen, rufous. *westwoodi* Ashm.

Pelecinella ashmeadi sp. nov.

Female: Length 22 mm.; ovipositor 14 mm. Black, slightly æneous on the head, thorax, petiole of abdomen and legs; abdomen greenish on the second segment and with a purplish-blue cast on the third and following segments. Hind tarsi with the first joint entirely yellowish white, the succeeding joints fuscous; second trochanter on front legs and extreme base of four anterior metatarsi rufous or yellowish brown. Body slightly white-pubescent on the thorax and legs, densely so on the face, the hairs on the hind tibiæ stiff and erect though short, black on the apical third of the tibia. Head deeply furrowed medially above the antennæ; on the sides striate above the middle, vertically rugoso-striate below. Antennæ as in *P. phantasma*. Face shagreened, with a shield-shaped bare area medially just above the lower margin; cheeks with a few large punctures; malar line distinct. Prothorax finely transversely aciculate above, smooth laterally; mesonotum more coarsely aciculate, smooth and sparsely punctate on the posterior part of the lateral lobes exteriorly; axillæ and scutellum sparsely punctate, not separated anteriorly. Metanotum transversely aciculate on its posterior half as well as near the median line anteriorly, towards the anterior angles sparsely punctate and on the pleuræ behind densely punctate. Pro- and mesopleuræ closely punctate, the latter with a long, deep, smooth femoral furrow. Petiole of abdomen very finely transversely aciculate above, cylindrical in form, as long as the hind coxæ; remainder of abdomen smooth, as usual in the genus. Anterior tibiæ each with nine or ten fine teeth or denticles along the inner margin, those toward the apex smaller and more approximate. Hind coxæ with a few transverse striæ above toward the apex. Wings hyaline; marginal vein four-fifths as long as the submarginal; stigmal punctiform; postmarginal attaining the wing-tip.

One specimen, Abuná, Rio Madeira, Brazil. Mann and Baker.

It gives me great pleasure to be able to dedicate the present species of this most remarkable genus to my friend, the late William H. Ashmead, who showed me years ago the two Brazilian species which he himself described.

FAMILY SCELIONIDÆ.

Hoplogryon fortis sp. nov.

♂. Length 2 mm. Black; legs fuscous; basal half of antennal scape brownish; wings hyaline, with fuscous veins. Head, seen from above, fully twice as broad as thick anteroposteriorly; occiput and temples weakly striate, the striæ extending parallel to the raised posterior margin of the head; ocelli large, in a small triangle, the posterior ones one-half farther from the eye-margin than from one another; front above polished, on its lower half coarsely vertically striated, the striæ extending higher on the sides than at the middle and converging below so as to pass between the base of the antennæ and the eyes, leaving a smooth stripe extending upwards from between the antennæ; cheeks striate, their striæ converging with those of the front toward the anterior edge of the insertion of each mandible; clypeus

transversely striate. Antennæ 12-jointed, scape reaching to the anterior ocellus; pedicel globular, one-third as long and nearly as thick as the first flagellar joint; second and third each somewhat shorter than the preceding; following subequal, the apical ones somewhat longer and considerably more slender; third flagellar joint scarcely over twice as long as thick and only feebly toothed beneath. Mesonotum shining, with sparse, rather weak punctures, longitudinally striate medially on its posterior half, the striated area not extending more than halfway from the median line to the tegulæ. Scutellum finely, irregularly rugose, a small space on the middle of its disc more finely sculptured; with a punctate line just inside of the posterior edge which is raised; postscutellum with a stout thorn which appears triangular in dorsal view. Metathorax closely rugose, its posterior angles produced as prominent thorns of about the same size as the postscutellar one. Pronotum not visible from above, finely sculptured, but shining; propleuræ rugoso-punctate, more finely so below; mesopleura with an oblique femoral impression which is transversely marked with coarse grooves; metapleura shining, with a small impression near the middle and a few oblique striæ at the base of the coxa. Abdomen obovate; petiole a trifle longer than wide at base, twice as wide at apex as at base, with parallel longitudinal striæ; second segment one-third longer than the first, nearly twice as broad at apex as at base, with a depression across the base, striated, the striæ spreading out fan-shaped behind and becoming much finer laterally where they are parallel with the lateral margin of the segment; third segment no wider at apex than at base, as long as wide and as long as the first and second together; finely longitudinally striated except at extreme apex, its striæ parallel; following segments smooth, rapidly growing shorter. Marginal vein long, a little more than half the length of the submarginal; stigmal vein one-fourth as long as the marginal and scarcely knobbed at tip; postmarginal wanting.

One specimen from Independencia, Parahyba, Brazil, Mann and Heath.

The very large and stout metathoracic spines, short antennal joints and abdominal sculpture will serve to distinguish this species from its congeners.

Macroteleia herbigrada sp. nov.

♂. Length 4.5 mm. Black, legs; except coxæ brownish yellow; antennæ brownish yellow below, piceous above; wings subhyaline, with fuscous venation. Head about half wider than thick antero-posteriorly, above with coarse separated punctures which have a tendency to assume longitudinal series behind the ocelli; in front of the ocelli they are irregular and farther apart, except for a dense row of smaller ones along the inner eye-margin; front medially with a shallow, smooth depression to receive the antennal scapes; malar line deep, over half as long as the scape, the front above it closely punctate; cheeks and temples coarsely and more sparsely so. Eyes bare; ocelli large, especially the posterior ones which almost touch the eye-margin. Antennæ 12-jointed; scape as long as the narrowest width of the front; pedicel slightly shorter than the first flagellar joint, which is twice as

long as thick, these together as long as the scape; second flagellar joint rounded, but little longer than thick; third one-half longer than thick, larger than the second and excised beneath; fourth to ninth passing from submoniliform to subquadrate each somewhat longer than thick. Pro- and mesonotum coarsely and sparsely punctate, shining; the punctures larger on the pronotum behind; parapsidal furrows complete, straight; almost twice as far apart in front as behind; lateral margin of mesonotum with a deep groove next to the tegula which extends forward along the lateral margin as a crenate line to meet the parapsidal furrow. Scutellum with a curved row of very large, closely placed punctures anteriorly and a similar straight row posteriorly; its disc finely and sparsely punctate; postscutellum very short, of even width, coarsely longitudinally grooved. Metathorax with two blunt teeth behind toward the sides. Propleuræ irregularly sculptured, smooth on the upper anterior portion; vertical strip between pro- and mesopleuræ longitudinally grooved; mesopleuræ with an oblique depression to receive the femora, this depression smooth except for an oblique line of punctate grooves behind the middle; metapleuræ irregularly rugose; mesosternum coarsely punctate. Abdomen twice as long as the head and thorax together; first segment scarcely longer than broad, toward each side with a longitudinal carina that extends backwards as far as the apex of the third segment; between these with three carinæ that converge and become weaker behind, only the middle one extending on to the base of the second segment; between the carinæ the first segment is more or less distinctly irregularly longitudinally striate. Second segment twice as long as broad, punctate-reticulate; third segment a little longer, similarly sculptured; fourth as long as the second, fifth and sixth growing shorter, narrower, and more finely sculptured. Venter punctate, sparsely pale pubescent and with a stout median carina. Legs obscure brownish yellow the clavate portion of the hind femora infuscated. Marginal vein one-half longer than the stigmal; postmarginal nearly twice as long as the marginal.

One specimen from Independencia, Parahyba, Brazil, Mann and Heath. This was taken in sweepings.

Hoploteleia pallipes sp. nov.

♂. Length 4.8 mm. Head, including flagellum of antennæ, postscutellum, metathorax and abdomen, black; lower part of mesopleuræ piceous; mesonotum and propleuræ ferruginous; legs light brownish-yellow, coxæ fuscous; wings subhyaline. Head twice as broad as thick; ocelli large, in a triangle, with the lateral ones removed by less than their diameter from the eye-margin; surface of head with large, separated thimble-shaped punctures above, on the front, and cheeks, the ones on the cheeks more irregularly placed; mandibles ferruginous. Antennæ 12-jointed; scape brownish-yellow below, almost as long as the three following joints; pedicel much constricted at base, pale below; two-thirds as long as the first flagellar joint; first flagellar joint twice as long as thick; following becoming almost imperceptibly shorter to the longer, pointed apical joint; flagellum scarcely thickened apically. Eyes large, broadly oval, bare. Mesonotum with a few, irregularly placed, large punctures; parapsidal furrows deep, straight, converging behind; median furrow complete, but not so deeply impressed. Scutellum large,

with straight base and sides, narrowed behind; its base with a series of three impressions on each side, the lateral one largest and the median one smallest; disk with very large, close-set punctures; apical margin with a series of small foveæ; lateral margins carinate. Postscutellum, or base of metanotum produced into a bidentate median process; margin separated at the base from the scutellum by a curved, coarsely crenate line; its anterior margin carinate on each side, the carinæ extending to the bidentate process; on each side of the process with a triangular areola, below which the metathorax is densely white-hairy. Propleuræ coarsely punctate above, smooth below; mesopleuræ obliquely impressed medially with a series of horizontal grooves, distinct around the edges, but obsolete near the middle of the impression; mesosternum rather coarsely punctate; metapleuræ irregularly rugose. Abdomen one and one-half times as long as the head and thorax together; of six visible segments, gradually widening to the apex of the third, then gradually narrowed to the truncate, bispinose apex; first segment one-third longer than wide at the tip, which is one-third broader than the base; with two approximate longitudinal carinæ medially, which enclose a deep, smooth furrow; laterally with a carina which extends backwards to the tip of the fourth segment; its surface like that of the succeeding segments, pitted with coarse punctures which assume a very decided longitudinal linear arrangement on the first to fourth segments; second segment as long as broad at apex, narrower basally; third and fourth segments quadrate; fifth smaller and narrowed at apex; sixth half as long, rounded at tip except for the two spines. Legs slender. Anterior wings with the submarginal vein extending nearly half the wing-length; marginal vein about five times as long as thick, almost as long as the straight, oblique, knobbed stigmal vein; postmarginal vein twice as long as the marginal; several other veins faintly indicated by thickenings; hair fringe very short; tip of wing attaining the tip of the fifth segment of the abdomen.

One specimen, Pará, Brazil, Wm. M. Mann. This species is very different in the sculpture of the head and abdomen and in wing venation from the Brazilian *H. rufidorsum* described from Rio de Janeiro by Kieffer.¹

FAMILY DIAPRIIDÆ.

Xanthopria gen. nov.

Head rounded, produced at the insertion of the antennæ. Eyes bare; ocelli in a triangle, far from the eye-margin. Antennæ 11-jointed, gradually swollen toward the tip, the club, although not distinctly marked off, including five or six joints. Mesonotum without parapsidal furrows, its posterior margin straight or slightly areuate; axillæ somewhat elongate oval, but with the anterior and posterior margins more or less parallel; scutellum with a large oval or trapezium-shaped depression at the base, convex, with a median carina posteriorly which is sometimes elevated to form a distinct tooth. Metathorax with a median, backwardly-curved tooth or spine at the base; with median, lateral and transverse posterior carinæ; the posterior angles somewhat produced. Abdomen with the petiole about as wide as long; second segment very large, others extremely short; fore wings with-

¹ Ark. f. Zoöl. vol. 1, p. 533. (1904.)

out, or with a very short, hair-fringe; marginal vein attaining the basal-third of the wing, the stigmal vein swollen, oblique, more or less wedge-shaped. Legs rather short; tibial spurs very short.

Type: *X* ♂. *opaca* sp. nov.

This genus seems to be most closely related to *Acanthopria* Ashmead represented in the West Indian Islands, differing, however, in having only eleven antennal joints. Only three other genera in the family have 11-jointed antennæ, *Notoxopria*, *Solenopsia*, and *Doliopria* and none of these are closely related to the present genus.

Xanthopria opaca sp. nov.

♀. Length 1.6–1.7 mm. Light fuscous, head piceous below the antennæ and about the ocelli; abdomen blackened along the sides and at apex; legs and antennæ considerably lighter than the body. Ocelli close together in a triangle the posterior pair a little farther from the eye-margin than from one another; vertex strongly elevated at the ocelli, the front with a vertical grooved depression between them and the antennæ; eyes ovate, rather small, with large facets, acute below; face slightly convex, the small clypeus protuberant; entire head closely, minutely rugose, opaque, except for a subshining area on the cheeks; antennæ nearly as long as the body, 11-jointed; scape as long as the four following joints together; pedicel cylindrical, as long, but thicker than the second flagellar joint and three-fourths as long as the much more slender first flagellar joint; third and following joints of flagellum about equal, but becoming thicker, the club very gradual, but rather distinctly 6-jointed, its joints except the last nearly quadrate. Mesonotum without parapsidal furrows, its posterior margin straight; scutellum with a large trapezium-shaped depression at the base to each side of which lie the axillæ and behind which lies the convex, rounded-quadrate body of the scutellum; scutellum behind with a short median carina; post-scutellum unarmed; metanotum with a median, blunt spine at the extreme base; the lateral and posterior margins raised and the posterior angles slightly projecting; entire mesonotum, axillæ, scutellum and propleuræ finely rugose, opaque; mesopleura shining except above; metapleuræ finely rugulose, shining, with a deep circular impression above, clothed with sparse wooly hairs above. Abdominal petiole as long as broad, a little narrowed basally, with sparse wooly hairs above; second segment occupying three-fourths of the abdomen, widest at the middle, with arcuate sides, smooth and highly polished; third segment short; others scarcely visible. Legs rather stout, tibial spurs minute. Anterior wings short and broad, distinctly brownish especially on the anterior half, entirely without hair-fringe; submarginal vein one-third of the wing length, gradually thickened before the short, stout, oblique stigmal vein; hind wings with a long fringe on the posterior edge.

Three specimens, Independencia, Parahyba, Brazil, Mann and Heath.

Xanthopria nitida sp. nov.

♀. Length 1.5 mm. Ferruginous, the abdomen beyond the petiole piceous, the head infuscated above and the legs brownish-yellow. Head smooth and shining, with a few conspicuous hairs; ocelli as in the preceding species; front without a median depression; antennæ with the scape as long as the four following joints together; pedicel as long as the second flagellar joint, thicker apically; first flagellar joint slender, one-fourth longer than the pedicel; fourth and following joints, except the last, more or less moniliform, the club very gradual, but rather distinctly 6-jointed; eyes oval, more narrowed below; face convex, slightly sculptured, but shining. Mesonotum polished, smooth, without parapsidal furrows; fovea at base of scutellum rounded, scutellum smooth, with a short, sharp carina which is elevated behind so as to appear as a tooth when seen from the side; metanotum with a sharp median tooth curved backwards; behind this with a median raised line extending to the raised posterior edge; sides also with a broad, carinate margin, the two areas thus formed smooth; posterior angles sharply produced; pleuræ smooth and polished, except the metapleuræ which are rugulose and clothed with short sparse hairs. Abdominal petiole as broad as long, clothed with short, glistening hairs; second segment covering three-fourths of the abdomen; three following segments very short, subequal. Anterior wings subhyaline, yellowish apically; vein one-third the wing length gradually thickened before the short, oblique stigmal vein; margin with a short hair-fringe apically and behind. Legs as in the preceding species.

Two specimens from Independencia, Parahyba, Brazil, Mann and Heath.

This species although similar to the preceding, differs by its shining head and thorax, spined scutellum and distinct median carina on the metathorax.

Hoplopria grandis sp. nov.

♀. Length 7 mm. Black, the legs more or less piceous; wings brown, with three hyaline spots along the anterior border and a hyaline streak on the disc. Head smooth and polished above, the large ocelli on a distinctly raised area; no spine between them; occiput prolonged into a narrow obtuse projection; front smooth and polished, the ledge below the antennæ very prominent, margined; face with a grooved depression on each side which meets the one of the opposite side above to form a large depressed area; below each groove extends laterally around the edge of the clypeus. Eyes large, oval, bare; cheeks as wide as the eyes, smooth and polished. Antennæ 12-jointed; scape distinctly longer than the head-height, arcuate, irregularly striated, bispinose at tip; pedicel half the length of the first flagellar joint; second flagellar joint two-thirds as long as the first and nearly three times as broad as long; third to fifth growing shorter and thicker; the fifth to eleventh quadrate; seventh to ninth widest, but the club is not at all pronounced. Head behind with a dense tuft of woolly hair below the level of the upper eye-margin. Prothorax with a dense collar of wool like that on the head; mesonotum smooth,

without parapsidal grooves, but with a median shallow, broad depression, a similar one on each side and a short narrow deep groove next the lateral margin behind the tegula. Scutellum with a large, oval impression at the base each side of the median line and a second one near the lateral edge; the middle of the disc convex, with an impression on each side and three longitudinal carinæ behind it; postscutellum with three strongly raised longitudinal carinæ. Metathorax at the base with a curved thorn, shaped like a bird's beak; concave on each side behind the thorn. Petiole of abdomen four times as long as broad; above with six longitudinal broad, and very shallow, opaque grooves, separated by shining lines; with a covering of whitish woolly hairs along the sides and below, and with a ring of loose sparse, woolly hairs before the apex; second segment lanceolate, nearly twice as wide at apex, and three times as wide at middle, as at base; smooth and polished; three times as long as the remaining segments together; third and fourth segments short, subequal, each with a minutely punctate band across the middle bearing a series of stiff hairs; fifth segment narrow but about twice as long as the fourth, finely punctulate and sparsely clothed with stiff hairs. Pro- and mesopleuræ smooth, polished; metapleuræ very rough, but clothed with dense white pubescence. Legs piceous, tarsi lighter, especially the front ones; sparsely hairy, the hind coxæ densely so. Wings deep fuscous, lighter apically and behind; costal vein falling distinctly short of the middle of the wing; marginal vein two and one-half times as long as thick; stigmal very short, punctiform; wing membrane with a hyaline streak below the submarginal vein, more distinct basally, a triangular hyaline area just beyond the stigmal vein, a small, oval subapical hyaline area, well separated from the stigmal one, and a hyaline streak on the disc from the basal third to the apical fourth; hind wings subhyaline.

From Porto Velho, Rio Madeira, Brazil, Mann and Baker.

This large species may be recognized by the color pattern of the anterior wings, the form of the abdominal petiole and the contour of the spine at the base of the metathorax. It falls near *H. rufipes* Kieffer, *H. spinosiceps* Kieffer and *H. bicarinata*, but differs from these in the wing-picture, and abdominal petiole and from the second by the unarmed head.

Galesus debilis sp. nov.

♀. Length 2.4 mm. Black; legs, except coxæ, ferruginous; wings subhyaline, folded longitudinally and deeply notched at apex. Head one-half longer than wide; shining; above with an outwardly bowed series of three large punctures on each side of the median line, with two more along the occipital margin each side of the posterior median one, and a smaller one each side of the middle median one; eyes margined above by an impressed line, separated from the front by a carina which is more pronounced anteriorly; head on the sides with a large impression below each eye; eyes round, bare. Antennæ 12-jointed; scape twice as long as thick; longitudinally grooved; pedicel one-half longer than the first flagellar joint which is one-third longer than thick at apex; second to fourth quadrate-monili-

form; following, except last, moniliform, enlarging and becoming quadrate. Posterior ocelli as far from one another as from the eye-margin, each connected to the eye-margin by a raised line. Pronotum with a series of large punctures along its posterior edge. Mesonotum shining, almost impunctate; parapsidal furrows complete, converging behind, of equal width throughout; lateral lobes of mesonotum scarcely depressed; a deep foveate impression in front of the tegula. Scutellum with two large hoof-shaped foveæ at base, at apex with two small circular ones. Metathorax with a carina in the shape of an inverted V. Petiole twice as long as broad, with three strong longitudinal carinæ above, and a weaker lateral one, marking off four shallow grooves; second segment with the base raised and medially notched from behind; its median furrow extending nearly to the middle. Pro- and mesopleuræ smooth and shining, each margined by a raised line; metapleura pubescent, coarsely reticulate. Legs stout. Wings strongly pubescent, except at extreme base.

One female from Independencia, Parahyba, Brazil, Mann and Heath.

This species resembles *G. sulcaticeps* Kieffer, differing by its larger size, longer petiole, shorter first and second flagellar joints and longer scape. In certain lights the front shows a trace of the median lanceolate area present in *sulcaticeps*.

NOTE ON THE MOUTHPARTS OF ORTHOPTERA.

By H. H. NININGER,

Palmera College, Lordsburg, California.

This paper is presented for the purpose of calling attention to an error which appears in some of our most widely used text-books on general zoölogy and entomology, as well as in other works which deal with the anatomy of Orthoptera.

For several years I have noticed the error, and always find it necessary to warn students against the tendency to see and draw the mouthparts of the "grasshopper" as they appear in the text-book instead of drawing them correctly from the specimen. For the drawings commonly used in text-books are not only anatomically incorrect, but are also unreasonable. For example, if one refers to Lang's Comparative Anatomy, Part 1, p. 446; or to Parker and Haswell, Vol. 1., p. 621, one finds the mandibles of the Blattellidæ represented as two organs identical in form; each bearing three sharp-pointed teeth, which are arranged in exactly corres-